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Correspondence from practical farmers, giving the results of their experience, is solicited. Letters should be signed with the writer's real name, in full, and will be printed or not, as the writer may wish.

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Secretary Wilson's Report.

Advance sheets of the report of the National Department of Agriculture indicate the rapid growth of American farming interests and of the department's work. Nearly one hundred distinct subjects are considered in the secretary's report.

Agricultural prosperity is stated to have become better distributed during the past dozen years, extending to all sections of the country. According to Secretary Wilson, "It is the farmers who have paid the foreign bondholders," since the favorable trade balance to the credit of this country is due entirely to farm products, the exports of which have gone far ahead of the imports, while other products have fallen behind. A combination of the domestic exports of forestry products with those of farm products gives a total constituting 67.3 per cent. of all domestic exports for 1903.

The secretary will be endorsed by the best agricultural sentiment of the land in his statement that the free-seed distribution does not accomplish the ends for which the law was framed. He believes the work should be limited to distribution of seeds and plants of new and rare varieties. The next step is to bring Congress to his way of thinking. Some of the congressmen seem to have the impression that their friends in the country are anxious for a certain bulk or weight of seeds, without much regard to kind or quality.

The department has been trying to secure new plants suitable for special locations or conditions. These include new wheats, oats, millets, a new alfalfa for the dry regions, new rice, flax, cotton, etc. Plants used in making various drugs are being tested with a view to finding out the cost of producing and preparing for market

An important feature of the work is the investigation of American fruit exports. A special study has been made of the conditions affecting fruit marketing and storage, especially in connection with the export trade, and experimental shipments have been made in order to determine the suitability of the variety and the requirements of consumers. It has thus been demonstrated that the Bartlett pear can be successfully and profitably shipped across the Atlantic and sold at an advance over home prices. Elberta peaches and several varieties of summer apples from Delaware have been landed in London in prime condition. A notable event of the year was the inauguration of direct shipment of American winter apples to Paris from this department. The Hussey varieties were found to have the preference.

Important work is reported from the soils laboratories resulting in some very valuable discoveries, from which the chief of the Bureau of Soils argues that nearly all soils are amply supplied with the necessary mineral plant food; that their supply as regards the plant is determined by the supply of soil moisture the crop can obtain from the soil; that the chemical analysis of a soil cannot, therefore, in itself throw much light upon the problem of fertility, but in attempting to control the factors governing crop yield, attention must be specially directed to the chemical condition of the soil as affecting the supply of soil moisture to the dissolved mineral nutrients, to the effects of climate, to rotation, and to general soil management.

The San Jose scale, which is fast becoming a serious pest in the East, is being fought by distribution of insects which feed upon the scale. An interesting discovery of the Bureau of Forestry is the fact that the original cause of many large forest fires is the work of insects, which collect in the lumber and kill many trees, thus favoring the feeding of the fires. Considerable space is devoted to the work on silk culture, but it seems doubtful whether labor is cheap enough anywhere in this country to make the venture profitable.

In connection with irrigation experiments, the secretary recommends a special study of pumps and of power as applied to pumping and to other farm machinery.

Good roads are considered in the light of the department's co-operative work with State and local authorities, the department furnishing the services of its road experts. The argument is advanced that good roads and free mail service must naturally go together.

Attendance at the agricultural colleges for the year 1902 aggregated 46,699 students, of whom 6299 were in agricultural courses. The graduates of these institutions in 1902 were 443, and since their organization over fifty thousand. Considerable advancement was reported in the way of secondary and elementary schools of agriculture. The agricultural high schools in Wisconsin have been so successful that a provision has

been made for an increased number by the State Legislature. Schools are about to open in California and Massachusetts, and in the Report of the Association of the American Agricultural Colleges and Experiment Stations Secretary Wilson strongly recommends the introduction of courses in agriculture into the high schools. The department is now equipped with a farmers' institute specialist, and is preparing to render practical aid to the important work of farmers' institutes throughout the country. In commenting upon the work of the experiment stations, a striking feature is the suggestion that the Government should grant them more money to carry on new investigations in co-operation with the farmers, and to provide better equipment. This recommendation should be a popular one, as the stations have to a remarkable degree succeeded in obtaining the support and confidence of farmers.

The secretary's report is remarkable for scope, progressiveness and good sense. It tends to confirm the general impression that, on the whole, the national agricultural interests are under very good management indeed. Hardly any other department of the Government has been so directly and practically successful in its special line of work and new development.

A Cow to Every Acre.

The Ploughman has been conducted as a dairy farm since 1887. At that time the farm consisted of thirty-five acres of clay loam intervale land and fifty acres of hillside, upland pastures.

For many years great efforts had been made to keep back the encroachments of the forest on this pasture. After much thought, the decision was made to solve the pasture problem by abandoning the pasture.

GIVING UP THE PASTURE.

This step called for a radical change in the management of the intervale. Previous to this time this land had been well fertilized with barn manure and unleached ashes, but was plowed only once in about ten years. A rough plan of the farm was drawn, and it was divided into five sections

A FIVE-YEAR ROTATION.

was then outlined, consisting of corn or potatoes, grain, grass and clover two years, pasture. The section longest in grass was plowed for the first crop in the rotation. The next section was taken for a pasture. It was at once found that great pains would have to be taken to make the farm manure go over the seven acres, about double the amount usually plowed. By the use of a manure spreader this was readily accomplished. We acted upon the supposition that five cords of manure per acre, applied once in five years, was fully equal to two cords of manure applied once in ten years, and with the increased tillage given the land, the fining of the manure and more thoroughly incorporating it with the soil, quite a material gain was made.

MORE FEED, MORE COWS, MORE MANURE.

Our cows were fed a fair amount of grain winter and summer. Here we unexpectedly found a great saving. While using the hillside pasture, the summer manure seem all went to foster and encourage the forest growth, or was washed into the brooks and low places. With the pasture in a portion of the field, supplemented by soiling crops and grain, this manure was all saved, and added materially to the amount and value of our year's supply of fertilizer.

It will be at once seen that our cows are at all times either on land that is to be plowed the following year or in the barn, where, with plenty of absorbent material and a tight basement, all manurial value is saved. After two years of this work we found the productive capacity of the farm so much increased that a silo was built and all surplus fodder corn and corn stover placed in it. By the saving in food value over drying and the affording of succulence, the silo became at once another great aid toward increasing our farm resources.

SUCCESS AND EXPANSION.

This work went on till the year 1897, and that year we were able to carry, including the pasture, a mature animal to each acre of the farm. At the start we were carrying but one animal to three acres, with the pasture thrown in. We purchased no coarse fodders nor hired any pasturing, except possibly to provide for one or two dry cows for a short period, neither had any coarse fodders been purchased since the abandoning of the pasture.

An opportunity presenting itself we then doubled the acreage of the farm, extending the same rotation over the new section, and trying to work up the larger acreage to the same capacity. In this we are succeeding fairly well, and today, instead of a barn 36x48 we have one 36x33, well filled with first quality hay, and two silos with a capacity of one hundred tons. We are farming fewer acres now than when we started.

This has been done without large outlay for grain or fertilizers, but through better tillage, more complete saving of the farm manures and their more frequent application and thorough fining and mixing with the soil.

These are not all nor the best of the good results. Our boys have become interested; have been kept busy with congenial work, and instead of turning their attention to a life of service for others, have been content to work for themselves, to live under the parental roof, and to enjoy the developing of the soil and appreciate the results that spring from it. So far I have said nothing about disposing of the product, a very important matter.

SELLING BUTTER OR WHOLE MILK.

Our first plan was selling butter to private customers. This worked very well for

a time, but finally it was found that the extra labor required could only be afforded from the regular duties of the farm, and we began selling cream to a creamery.

This plan was followed till 1898, at which time an opportunity to establish a milk route presented itself, and since then we have sold milk to a first-class retail trade. We started with the idea that we would sell good, clean milk from healthy, clean, well-fed cows, that we would have everything about the business first class. This idea has been followed all along, and has brought good results. Believing that all customers deserved a clean, healthy product, we have never asked an extravagant price, but have kept the rates within the reach of all.

We fully believe in the possibilities of Maine farming. We rejoice in the forward steps that are being taken along all lines, particularly in dairying, and we hope efforts

will when a good price is offered and the goods are wanted.

P. E. WHITZ.
Lewis County, New York.

Now to Bring up a Run-Down Farm.

O. J. Miller, Pennellville, Pa., writes that they purchased a farm last spring that is pretty well worked out and most of it covered with briars and weeds. The soil seems to be a dark, sandy loam, underlaid with slate. He asks whether they can make a good-sized farm of this by using fertilizers. They sowed six quarts of clover seed and four of timothy seed per acre last spring and got a fairly good stand. Plenty of stock would be kept if they could raise enough feed for them. They have a good barn with earth floor and haul manure out daily, as there is no good place to store it. They can get plenty of lime readily. The general prin-

comes from the decaying vegetable and animal matter in the soil. Do not add too much at once, but keep at it regularly in your rotation. I am glad you would keep plenty of stock if feed could be raised for them, because that is the surest and safest way to bring your land up and keep it productive.

Grow forage crops, corn, hay, oats, etc., and feed them all out on cement floor, and buy wheat bran, linseed-oil meal, cotton-seed meal, gluten feed, etc., to furnish protein to balance up your ration. This is the way for an Eastern farmer to buy fertility. Of course, with clover and cow-pea hay you will not need to purchase as much protein. On this sandy land keep something growing. Don't leave it bare during winter. Have live roots in soil and some growth of something on the surface. Put your manure out on sod ground to be plowed in the spring, as a rule. Don't plow it in fresh; it will get down fast enough on sandy land.

When you get considerable vegetable matter to plow in, in the shape of sod, a ripe crop of peas, or crimson clover, strawy manure, etc., you may safely use fifteen or twenty bushels of lime per acre after plowing. Spread it very evenly and harrow in. Remember that for best results every spot of soil as large as your hand should get some. This will probably help the following crop, as well as indicated, and particularly the chances for getting a good growth of clover. I know there are some farmers in Pennsylvania who use one hundred to three hundred bushels of lime per acre and who will laugh at the above advice. Never mind; don't use more than about twenty bushels, and do not repeat for three or four years. Now I presume you will want to seed considerable of this land covered with weeds next spring, before you get it ready for thorough work, even if you do not get the best of results. I think I would try using fifteen bushels of lime per acre, very thorough tillage, light seeding of oats and plenty of clover and timothy seed.

Use one to 15 bushels of oats per acre, and a little fertilizer, such as does best on your land. In five to ten years you can make this land quite productive, and probably will not need to use much, if any, commercial fertilizer after that.

Health for Elderly People.

If you are along in years, all the more need of guarding your health, writes T. B. Terry, in the Practical Farmer. But now, do not infer that the less of your strength you use the better. No, that is about as bad as overdoing. One should not work to actual exhaustion, neither should he stop very much short of it for the very best results. Use of muscles and brain is the law of life. And the more use, within the limit of our daily supply of strength, the better the health and the longer the life. This is a necessity, if one wishes to retard the coming of the infirmities of old age.

Our farmer friends, as a rule, work hard enough. They need only to be cautioned against overworking. And then more particularly after they have reached the age of fifty or sixty years. They should continue to work then, but let younger hands do some of the heavier jobs. They should keep as busy as ever, but gradually arrange to have the work of a lighter and lighter character. And by all means use the brains as well as the muscles, so you can continue to have a sound mind as well as a sound body.

A weakening of the brain power, loss of memory, etc., is almost a living death. It can be prevented to a considerable extent by proper use. The carpenter who helped me a month last summer is seventy-three years old. He is as spry as any boy and can do as much in a day as ever, except at heavy work. He lives 2 miles away, but was here every morning by six-thirty. One could set their clock by him. He told me he had thought of giving up work when he was seventy-five. I urged him not to do it, but to keep right on, being a little more moderate and avoiding heavy work. The proper way would be for him to keep a young, strong man to work with him to do the lifting and straining work. I would give the same advice to farmers who are getting old. Some four years ago our family physician insisted that I must not go to any Institutes, and so did our folks and all our friends. But I took the bit in my teeth and went. They had little hope of seeing me come back alive. I went where I could stand what would be expected of me. I cut down on what would be required of my strength decidedly, but kept at my work. I came back better and am quite well and strong now. And now listen: Our good doctor told me the other day that I was right in not dropping my work and to keep at it, only be careful to not overdo. I pass it on to all of you. I know it is right. I know it means longer life and more enjoyment while you do live, particularly the latter. What is longer life worth when one is made wretched by the infirmities of old age?

Do not move to town, friends, when you are fifty or sixty years old, or seventy, as soon as you are financially able. The change to comparative idleness will soon make life more or less of a burden. It will surely hasten the infirmities of age. Keeping busy, daily, within your strength, will help retain them. Let up gradually, doing just what you safely can and hold your own, but do not stop. If you do not need to work longer, as far as income is concerned, work to help others, making your life a blessing to as many as you can.

I have told you of one of my aged friends who had never stopped work and who is well and enjoys life. I could tell you of others about the same age who stopped work ten or fifteen years ago, and who are far from being as well. They can talk about their infirmities by the hour. But they do not realize that they are simply reaping as they sowed; that their troubles could have been put off and almost prevented by an active, useful life, with due attention to moderation in all things. Suddenly quitting work will usually bring on old age troubles with a rush. A gradual letting up, but still always using mind and body, within your strength, breathing pure air night and day, and avoiding excesses of all kinds, will retard the coming of the infirmities of old age.

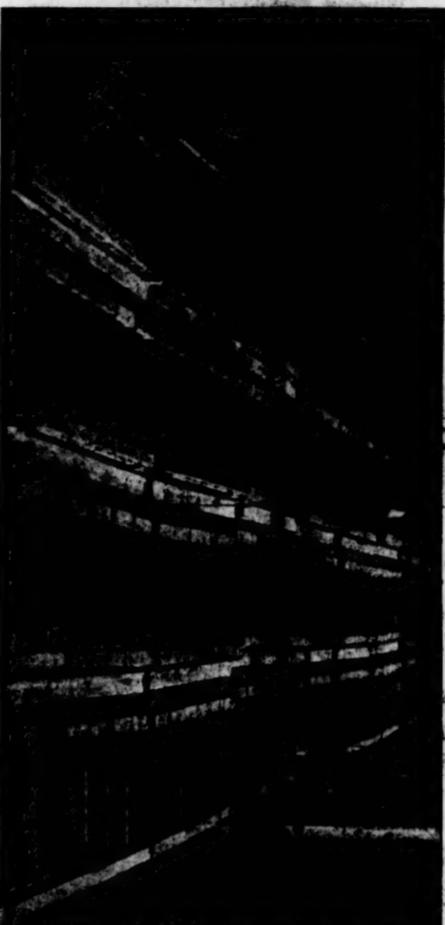
Corn or Oats for the North.

We have had two cold wet seasons. Corn has failed in many cases, while oats have yielded bountifully. Now the question arises, why plant corn? Oats are the better crop to feed, and a more economical crop to grow in every way.

Corn alone is an unprofitable food, while oats alone form a nearly balanced ration. Should any season prove too late for oats, barley may be sown as late as July 1 and make a profitable crop. Corn may be king in the South, but in my opinion the farmers of Maine had better stick to the harder oats and barley.

S. A. SHAW.

Auburn, Me.



CHICKENS IN FATTENING COOPS.

to maintain the high standard for the products of our dairy herds, which they have sustained for a long time, may continue and meet with success. Let us all become aware that Maine, with her climate, her soil, her markets, her schools and her many social advantages, offers inducements to the intelligent hand and eye, to the trained mind and the energetic will that are unsurpassed anywhere.

B. WALKER McKEEN.
Oxford County, Me.

Active New York Farmers.

In Lewis County, for some time past, the people have been enjoying the sleighing, which has been sufficient to do business on runners. The greater portion of the present November has been quite snug winter weather. Twice during the month the mercury has reached zero. It is seldom in this section that we experience a much cooler November.

Our lumbermen intend to leave December for their winter's work in the great spruce forests where they have large contracts getting out pulp wood. The pulp-wood industry is getting to be immense in this country. When one takes a look at the numerous pulp and paper plants located on Black and other rivers in Lewis and Jefferson counties, then one could somewhat contemplate the vast amount of spruce timber that it takes yearly to supply this gigantic enterprise. During the summer and winter, it gives employment to a vast number of men and teams, and these men command big wages, consequently it caused a great drawback to the farming classes, as laborers flock to the lumber camps to secure the big prices offered them. The farmers are obliged to pay extravagant prices for help, and good men are hard to procure many times at any price. Many of our farmers are obliged to pay from \$20 to \$25 per month for help to carry on their business.

This is vitally important if you want to bring up your farm cheaply. It is evident from letters received that some do not understand what elements of fertility are found in the urine. And not long ago a good writer in a leading farm paper said the liquid should be saved because it was rich in potash and phosphoric acid. There is no phosphoric acid in it. It is all in the solid. Nearly all of the potash and a large part of the nitrogen that comes from animals in solid and liquid voiding is in the urine. When farms were rich and productive, it had an abundance of all kinds of plant food, it was not so necessary to save the liquid, at least farmers usually would not pay much attention to the matter, as long as they did not particularly need to. Now, with farms run down and some fertility to buy, it is an important matter, and cement floors are being built by the hundred. Now remember, that it is of the utmost importance that you get your soil well supplied with humus and keep it so by growing crops on it to put back, either directly or in form of manure. Then a little fertilizer may help you greatly, far more than it would without this humus. The humus

is mostly meat. The natural food of worms is largely meat, and no hen will lay as well as she ought unless she has milk or some kind of meat food. The trouble is that many farmers feed it out a handful or so to a large flock every few days, perhaps, and then conclude that it doesn't amount to anything. Meat is a food not a medicine. It is nearly all just the right material for egg making. Get it by the bag or the ton the same as grain, and use plenty of it. A quart in a large pailful of dough is none too much. If there is plenty of skimmed milk to wet up the soft feed not much meat will be needed. Dried blood and fresh-cut bone are also good forms of animal food.

Hens do not mind cold days if there is dry litter in which to exercise. But they must be warm by night, or the first severe cold snap will shut off the eggs. A snug, tight roosting-room pays. Warmth at night is more important than ventilation. Evergreen boughs hanging close over the roosts help the birds keep warm. Large flocks keep warmer than small ones. This last point is not commonly appreciated, but there are very successful winter egg producers who crowd from thirty to one hundred fowls into a small house at night, giving them wide range by day and obtaining plenty of eggs when prices are high.

Those who intend to raise early winter broilers should be getting ready. The best prices are obtained during March, April and May, and the chickens to be ready for market then must be out before long. Incubators are started early in December. Chickens hatched the first of January should be worth thirty or forty cents a pound in the first part of April. Eggs will hatch well at this time of year. The main trouble is to get the early pullets to lay so that enough eggs can be had to fill the machines. The scarcity of eggs at this time will probably reduce the hatch and result in extra high prices next March and April.

It will cost about fifty cents to winter



CHARACTER ON HORSEBACK

Many a peculiar sight one sees on horseback. Did it ever occur to you that a horse raced in this condition becomes very much overheated. The saddle with its weight rubs the back. Under the bridle and straps are little sore and chafed spots. Soothe and refresh by the use of Gossamer. Article of great value in a stable.

G. N. CRITTENDON CO.,
115 Fulton St., New York.

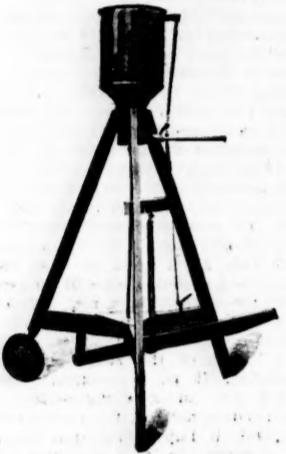
Poultry.

Artificial Poultry Fattening.

The market requirements in regard to dressed poultry are more exacting today than ever before. This is not only true with poultry, but the same conditions exist with cattle, sheep and hogs. A well-fleshed product not only weighs more, but brings more per pound, and in the case of poultry, the difference sometimes amounts to ten cents per pound. It is possible in a lot of chickens to have some that are in very good flesh, but how to have them all well fleshed and able to command the top price, is something that has been sought for a long time.

INCREASED USE OF MACHINES.

That fattening by cramping fulfills this purpose must be readily acknowledged by the large number of cramping machines in use today. There is a party at Sidney, O., who uses twelve cramping machines, fattening some twenty thousand every month. In this connection, I might state, that previously this party ran thirty incubators, raising thousands of chickens yearly, besides producing thousands of dozens of eggs for the market yearly. But he has found so much money in fattening by cramping that he has given up raising poultry and eggs for the market, and his thirty incubators are idle and for sale. There is a party also in



ALLEN'S FEEDING MACHINE.

Iowa using twenty-two cramping machines—a party in Illinois who fatten on a very large scale, fattening thousands yearly, a party who supplies the White Star Line, with poultry fattened by cramping, and they take all he can supply. The Armour Packing Company of Davenport, Ia., has a contract for five hundred thousand hand-cramped poultry.

The greatest industry of Clarinda, Ia., is fattening chickens for the London market. At the central station here butter, eggs and poultry are received from a radius of seventy-five miles and to the value of \$2,000,000 annually. This company is the oldest in Iowa, and has other stations at Keokuk, Burlington and elsewhere, handling altogether between \$5,000,000 and \$6,000,000 worth of dairy and poultry products each year. The feeding-house at Clarinda accommodates about 7500 chickens, which are fattened by cramping appliances.

ADVANTAGE OF SPECIAL METHODS.

By this means the weight of the chicken is increased from thirty-five to fifty per cent. The flavor of the meat is much improved and the selling value greatly advanced. The process of fattening is not secret as has been represented. The Clarinda Poultry Company is anxious to teach the farmers how to do it in order that they may improve the value of their chickens by proper food and care. They do the same thing with steers and hogs, and there is no reason why they should not fatten their chickens. The feeding machine will eventually be a common adjunct with poultry raisers, because the one who does not use it will produce so much better birds than the one who doesn't use it that the one who does employ the machine will see that to command the price for the birds of the one who does use it, he must use it himself. The reason for this is the almighty dollar; in other words, "results."

When chickens, especially cockerels, run at large, while their appetites are good they lead too gay and active a life to lay on much flesh. If they are cooped up and fed from troughs they may eat a little, but they are not active enough to create much of an appetite, and as they have previously led an active life they are not contented at being confined, consequently they eat little comparatively. In other words, they have not appetite enough to eat all the system can assimilate.

Now when the cramping machine is used it matters not whether the bird has an appetite. That bird is fed all it can possibly assimilate. The food should be so prepared that the fowl can assimilate it with the least possible exertion on the part of the digestive organs. When this is done the bird has assimilated so much more food than when fed otherwise that it is in much more flesh and commands much better price. It leaves a profit that well repays for the extra work of feeding each bird by machine.

The birds will stand this high feeding for a certain time, which is between two and four weeks, and take on a surprising amount of flesh. But there comes a time, if kept up, when the reaction seems to set in, and the trick is to get those birds off to market before that time or before the reaction has set in so far as to have done any harm. This is generally known and understood when ducks are fattened in large quantities. By a little experience one can thoroughly master the process and would not then think of being without a cramping machine.

COOPING AND CARE.

In fattening put each bird in a stall by itself. Several can be put together and good results obtained, but eventually one

will learn that it is much more satisfactory to have each bird in a stall by itself. Do not build the coop stationary, but of a size easy to handle, for when stationary it requires too much time to whitewash, which should be done after each lot is taken out. The best and cheapest coop is made of lathes nailed on to a frame, being four feet long, seventeen inches high, eighteen inches wide. On the bottom nail two or three lathes, leaving a space of one inch between lathes. This will leave a space both back and front of bottom for droppings to go through, and so keep the coop clean. This space must be left both back and front of the bottom, as bird will turn around so long as it can get its head up. These coops can be set up from the floor and the droppings scraped up from the floor. But if space is to be economized, pieces a little longer than the height of the coop should be nailed on to the four corners to serve as legs. Then a tray can be put under each coop and coops put on top of each other three or four high. The coop will keep clean, and by cleaning the trays out every two or three days, the air in the room will keep sweet. Gypsum or land plaster is a good disinfectant, and it is well to sprinkle the bottom of the trays with it after they have been cleaned out. To whitewash make a trough a little larger than the coop, put about ten inches of whitewash in it. Put in coop, turn over, and the job is done.

HOW TO FEED.

Wheel the cramping machine up to the coop in which the birds to be fed. Take the bird in the left hand, holding its feet and flight feathers of the wings in the same hand, stretch out the neck and push on to the feed tube of cramping machine, being sure end of tube is in crop. Keep the fingers of the right hand on crop and press the crook with the foot. At first, feed the bird lightly. After a few days the crop can be filled full.

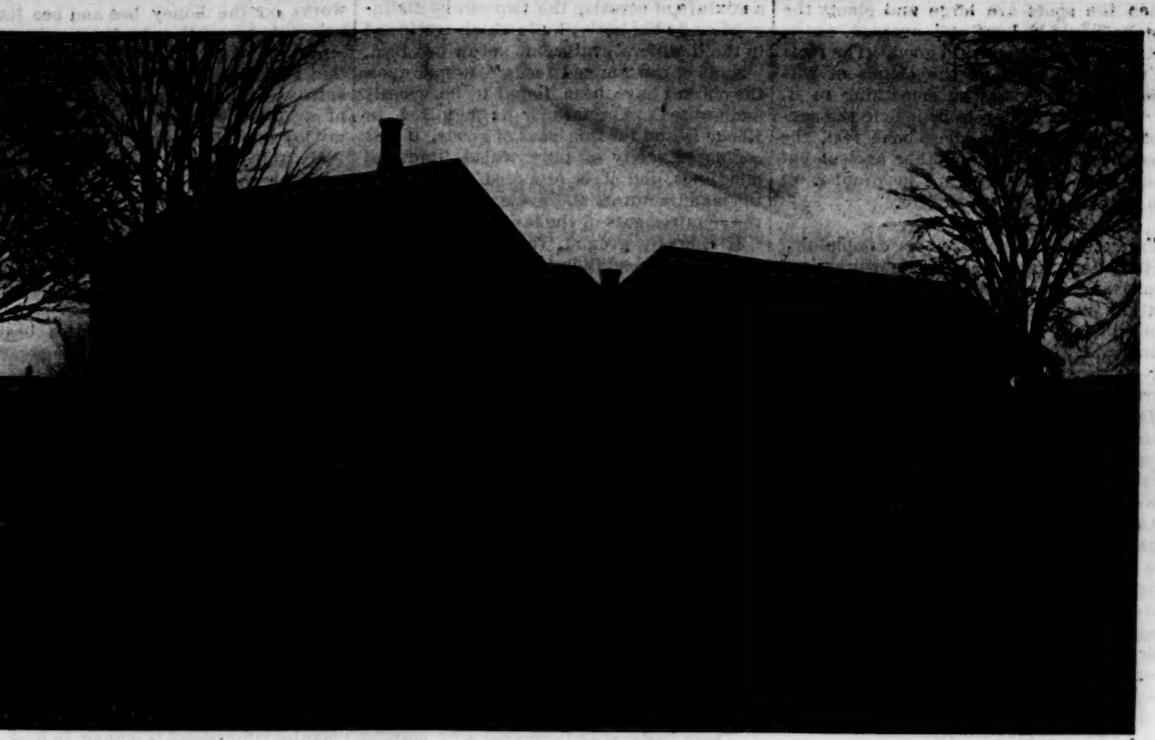
As to the feed, some use one thing, some another, but do not feed too much corn meal. Be sure to use pulverized charcoal in the feed, about three pounds to one hundred of feed. It is a peculiar characteristic of fowls that they can assimilate a large amount of fat, and this point should not be overlooked when very best results are desired. The food should be mixed to a consistency of thick cream, and to be sure the food is all right take note of the droppings. They should not be watery, but of a consistency to hold together. If the fowls have been fed right, it will be noted that they gain most during the second week.

The main points in fattening by cramping are to watch your birds and know the amount of food to give. It is well to slightly ferment the food before feeding. This may be done by mixing the food up twelve to twenty-four hours before feeding. If the weather is cool the food should be put in a warm place.

FIGURING THE PROFIT.

The difference between fattening fowls by cooping and feeding by trough and feeding by cramping is the extra weight of flesh that is put on. Aside from the fact that a good many birds actually lose flesh when cooped and fed from troughs, those that do well do not gain nearly so much as those fed by machine. Now the cost of time of feeding in trough is less than when the machine is used, but the cost of time when fed by machine is not over 3¢ cents per bird for three weeks. If the bird fed by cramping machine weighs four pounds at start of feeding, it should weigh six pounds after fattened. But after fattened it would sell for at least four cents more per pound than before fattened. In the first instance at twelve cents per pound, forty-eight cents; in the second ninety-six cents; but a cent of feed for three weeks is 12¢ cents, cost of time 3¢ cents. The grand total of eggs and dressed poultry received in Boston and the thirteen other cities named being \$20,263.88.

It is certain that a part of the eggs and dressed poultry appearing in the receipts of other cities appear also in the receipts in Boston, being bought in the latter city by dealers in nearby cities, such as Lynn, Salem, Haverhill, Lawrence, Lowell, etc., but dealers say that those figures would be quite balanced by the poultry and eggs brought into cities near the borders of the State by producers living over the line. Then, too, the cities and large towns in the western part of the State receive their supplies from New York city and Albany, and we have left out of the reckoning several cities, such as Newburyport, Gloucester, Marlboro and Northampton. To be perfectly fair in the figures, however, Dr. Brigham deducts \$2,263.636 from the total, considering that the figures are duplicated to that amount, and he reaches \$18,000,000 as the money value of poultry and eggs coming into the State last year.



FARM BUILDINGS OF B. W. McKEEN, OXFORD CO., ME.

See descriptive article.

Horticultural.

Winter Bulb Culture.

When it comes to a question of the potted bulbs for winter blooming, I have only one answer to the question as to how many, or what, and that is, as many as can be had of any and every sort, for it is utterly impossible to have too many. When possible, pot them at intervals, from the beginning of September up till the end of November, or even later. I have had glorious blooms from bulbs that were potted as late as the middle of December, but, of course, they were equally late about blooming, being only a little earlier than the earliest of the garden bulbs.

Pot them in any fairly good soil; see that the drainage is good, give them a good watering, firm the soil well around the bulb and then put in a cool, dark place until the top growth gets a start. Every week or so look them over to make sure that the bulbs are firm in the soil. The roots may strike the drainage material and shove the bulb up. If the soil is very dry, water again, and look out for the mice, for they appreciate the bulbs as a food.

When the top begins to show a growth of foliage bring the pots to the light, but do not keep them where it is warm. Remember what the temperature averages at the season when these bulbs bloom, unforced, in the gardens, and it becomes evident that the temperature of the ordinary window garden is altogether too high for them. If they are kept from freezing that is all that is needed.

When the bulbs are well developed, it is a good plan, unless the soil is very rich, to give a good fertilizer of some sort to give added size and lasting quality to the blooms. I like the commercial fertilizer for pot plants of all sorts, because of its freedom from insects and its lack of odor.

The bulbs which produce large blossom can be made most effective when planted singly, or, at most, three or four in a pot, but those of smaller habits of growth are best planted in clumps or masses. The finest display I ever had was when I had some boxes made, about eight inches in depth, and then massed the bulbs exactly as I would in the garden. When they came into bloom I kept the boxes on the floor of the coolest part of the room.

For these box-beds one precaution must be taken. Select such bulbs for each box as will mature their root growth in about the same length of time. Portland Transcript.

Eggs Less in Demand.

Since Thanksgiving week the tendency of eggs has been to decline slightly owing to the lighter demand, but the best grades of fresh stock are as high as ever. Eggs are still very scarce. The large supply of cold-storage stock relieves the situation somewhat, but there is every reason to believe that a very high range of prices will hold all through the month. By that time the supply from the South should begin to increase rapidly.

At New York the demand is very light, especially for fresh-gathered stock, and some receivers carried over more or less surplus from last week. The tone of the market is easier and prices show a decline. Average best Western are selling at 30 cents, although some holders are not disposed to sell their best stock at that figure. The medium and lower qualities move rather slower at proportionate prices. Refrigerator eggs are quite firmly maintained in price, but it requires better stock than can be found to command the outside quotation. Lined eggs hold steady.

Egg Supply and Prices.

According to figures prepared this week by Dr. A. A. Brigham for the Massachusetts Board of Agriculture, the receipts of eggs at Boston have increased from 625,881 cases in 1890 to 1,003,165 cases in 1902. The range of prices in 1890 was 14¢ to 28 cents, and in 1902 the range was 16¢ to 36 cents. Evidently the increase in supply has been much more than offset by the increase of demand.

The grade of eggs taken for the standard of price is "fresh Western," and Dr. Brigham, whose statement is condensed in the following account, gives the highest and lowest price of each year. A study of his tables gives some interesting figures. The lowest average price for the whole year is 15¢ cents in 1897, and the highest average price is 22¢ cents, reached in 1890 and again in 1902. There was one week in January, and again the second week in February, 1893, when fresh Western eggs reached the unusual price of 36 cents a dozen, and yet all through the year was but 20¢ cents.

In 1902 the highest price reached was 36 cents, the lowest 15¢ cents, and the average for the fifty-two weeks was 22¢ cents. Marketmen say, asserts Dr. Brigham, that not only is the quantity of eggs received in Boston increasing rapidly, but that the price is steadily advancing also; the figures given in the Chamber of Commerce reports, however, hardly bear out the latter statement.

Eggs have been unusually high in Boston all of this year, which promises to be a record breaker; but the highest price of last year was no higher than that of 1893, the lowest price of last year only a half cent above the lowest figure of both '91 and '93, and the high average price of last year was exactly equal to the average price of 1890; these figures indicate a fairly steady price, taking several years together.

The preliminary estimate of the average yield an acre of potatoes is 84.7 bushels, against an average yield of ninety-six bushels in 1902, 65.5 bushels in 1901, and a ten-year average of 79.5 bushels. The average as to quality is 86.4 per cent, as compared with 90.4 per cent in November last, 78.4 in November, 1901, and 88.1 in November, 1900.

The preliminary estimate of the average yield of hay is 1.54 tons an acre, against an average yield of 1.56 tons in 1902, 1.28 tons in 1901, and a ten-year average of 1.33 tons.

The average as to quality is 91.3 per cent,

against 88.7 per cent in November last, 91.3 in November, 1901, and 89.7 in November, 1900.

Onions, squash and turnips continue plenty and cheap, except for best grades. Most other lines of vegetables are in moderate or light supply, with prices good. Common or poor lots of onions are low, some selling below 50 cents. Potatoes hold steady in price, heavy receipts being balanced by a good demand. Cabbages are rather decreasing in quantity and prices are very firm. Southern stuff is in light supply and will continue so if reports of a disastrous freeze-up down there prove not exaggerated. The thermometer is said to have dropped four or five degrees below freezing as far South as Florida, last Saturday, and this would bring ruin to tender kinds of vegetables. Hothouse vegetables are well sustained in price. Cucumbers are high for the season. The failure of the outdoor crop last summer helps the present sale of the hothouse product. Lettuce is rather plenty, and hundreds of barrels and

marked packages. The summoning into court of twenty-six Fall River grocers for selling made-butter, without displaying a sign to that effect, is but the beginning of the work.

Business in southern Worcester County, bridge and village of Grafton, Northbridge and village of Saunderville and Farmerville, advanced the price of milk from six cents to six cents Dec. 1. In several other localities in New England the advance was made Oct. 1 or Nov. 1.

The Bureau of Forestry has undertaken the preparation of a working plan for the ten-thousand-acre tract of the Mount Pleasant Hotel Company in New Hampshire. The forests on these lands have been heavily cut, and the company desires to put them in the best possible condition both for the benefit of the forests themselves and for the scenic effects.

The discovery of a new way of extracting turpentine, made two years ago by Dr. Charles H. Herty, working under the direction of the Bureau of Forestry, is resulting in a complete change of methods by turpentine operators all over the South.

The largest shipment of apples which ever left New York arrived at Bremen last week on the North German Lloyd steamer Main, which sailed from New York, Nov. 19. It consists of 22,299 barrels and 1540 boxes.

What is said to be the largest steer in the world was sold Nov. 24 to a syndicate of Greenbush (Ind.) men, who will fatten it for the St. Louis Exposition. The steer is four years old and weighs 2800 pounds. When fat he may weigh 4000 pounds. The animal is eighteen feet six inches from nose to tail, and is six feet nine inches high. His girth measure is sixteen feet four inches. He sold for \$200.

—A Springfield (Mass.) dispatch reports: "The price of eggs is now very high, and promises to go higher within the next week or two. The price asked for local eggs by the few people who have them to sell is forty-five cents a dozen, and the retail price is fifty cents. These eggs are to be sold out of the market.

Northern eggs are for forty cents a dozen, and the supply is somewhat greater than the supply of local eggs. Cold-storage eggs sell for thirty cents a dozen. Eggs are much scarcer than for several years at this season. It is believed the fact last spring was a bad one for chickens, and many were hatched late, has something to do with the scarcity.

—Heavy apple shipments from Canada and this country to England are beginning to glut the market there, judging from cables received from Liverpool and Glasgow. From the former port comes the cablegram that there are 15,000 barrels of the fruit on the market, causing a depression, and from Glasgow the despatch is even stronger, stating that conditions are so bad that further shipments are unavoidable.

—Demand for the delicious American apple product in England has been growing tremendously in the last few years, but this season the fruit-growers appear to have been unable to meet it. Such shipments have never before been known as those of the last two or three months, which have brought the total thus early up to more than two million barrels. This figure was reached last week, when from the ports of Boston, New York, Montreal, Portland, and St. John 204,793 barrels were shipped, or 60,560 barrels in excess of the corresponding week last year and 80,199 more than the corresponding week in 1901. To be exact, the season's total is now 2,306,591 barrels, against 1,416,400 in 1902 and 416,045 in 1901.

In the fiscal year 1903 there were shipped from Boston 4,063,263 cases of shoes, compared with 3,957,772 cases in 1902, 4,360,900 cases in 1901, 3,291,162 cases in 1900, 4,255,670 cases in 1899 and 3,550,992 cases in 1898. For the six months ended Sept. 30, showed that over \$1,000,000 worth of shoes had been shipped in excess of shipments in the same nine months of 1902.

—Farmers' meetings in Massachusetts have been arranged for as follows: Dec. 9 at Northampton, with address on "Intensive Farming and Gardening," by H. M. Howard of West Newton. Dec. 9 at Chelmsford, with address on "Improved Farming," by Professor Waugh of Amherst Agricultural College. Dec. 11 at Sudbury, a dairy meeting, with addresses by C. S. Jewett and C. D. Richardson.



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NEW ENGLAND JOURNAL OF AGRICULTURE

TELEPHONE NO. 3707 MAIN.

It takes the sunny Italian colony to supply an old lady who dances gayly at her eighty-ninth birthday party.

Truly, one cannot help feeling that it is a bit absurd of a stove-lining factory to allow itself to be turned up.

What would the Pilgrim fathers and mothers have done if the boys of early Plymouth had gone in for burglary?

A recent writer has said that woman was never so much woman as in this present century. If this be so it has certainly taken the sex a long time to arrive.

If it be true that Mr. Henry Lehr is studying to imitate Miss Gay Templeton as a parlor entertainer, it is to be hoped that the fact will discourage other persons from studying to imitate Mr. Lehr.

The destruction of the Academy of Music removed a building that was quite as famous from the dramatic as from the musical standpoint. There are not many buildings left that are as closely associated with such names as Edwin Booth and Clara Morris.

It is rather an interesting illustration of the "literary" character of the age that the Lend-a-Hand Society has had to cut out books as one of the items that the generous minded may send the Phillips soldiers at Christmas presents. There is already more than enough literature to go round.

Some of the bee-keeping fraternity are very liberal minded. To the question, how can the producer increase his swarms, and at the same time get a full crop of honey, one of them replied: "Buy your neighbor's bees." Something like the complete course of bookkeeping in only three words: "Never lend them."

This report from Kansas of the discovery of remains proving that man existed before the carboniferous era should be a comfort to those of our contemporaries who wonder what is going to happen when the coal gives out. If man lived without coal once, why, of course, he can do it again, only it must be admitted that he had the good fortune not to have got used to using it.

The statement recently made by a New York clergyman that "In fifty years women will know more than men because women have more time to read and study," hardly fits with the same gentleman's prediction that women will have taken a place side by side with men in all important businesses. Unfortunately for this prospect, just in proportion as woman becomes engaged in business she becomes like her brother and has less time to read and study.

Miss Geraldine Barbara Freitchie of Waterbury recently celebrated her eighth birthday by delivering a lecture on anatomy before the Waterbury Scientific Society. Enthusiasm knew no bounds. The audience then and there took up a collection to buy the little one a skeleton, which will doubtless hang in due season on the Freitchie Christmas tree. Barbara Freitchie's work is not over, it may be added, for she is soon going to begin studying the muscles.

The way to get legislation attended to is to write about it to the men whom you elected to do this work for you. Even a few letters have great effect, because they are considered to show the drift of opinion. Let the lawmakers know they are being watched for results. Names of the congressmen of your district, if not known, can be had from the Librarian of Congress at Washington, and those of State legislators from the secretary of State at the State capital.

Buildings may come and buildings may go, but sites have a desirable permanency. It is not often, however, as is about to happen in the case of Boston's oldest drug establishment, that a business returns to its earliest environment after having journeyed elsewhere. As the richest merchant of his time, moreover, Mr. Peter Fanueil may even have handled a few imported drugs long before Mr. Metcalf opened his little old drug store just over the merchant's once cheerful wine cellar.

The supply of farm help, except in boom times, will take care of itself, when farmers can manage to offer work at fair wages all the year through. It is the slack winter season that is largely responsible for the loss of good men who are not easily replaced in spring. Market gardeners, who have plenty of winter work in green-houses, and among the forcing beds, have comparatively little trouble in getting help. Milk farmers who keep large herds of cattle usually continue to keep their best men through the winter.

Some better and easier way to send money through the mail is much wanted. A return of the old-style practical currency would be popular, but for one reason or another the authorities appear not to favor it. A bill now before Congress provides for what is called a post-check currency, for sending small amounts by mail. This currency would require considerable less bother, expense and red tape than the ordinary postal order. What is wanted is something that can be bought and kept at hand as easily as postage stamps, but less bulky and more readily turned into money.

The term "A Five-Day Farm" is used in some sections to denote a farm where the houses, on account of the wetness of the soil, or for other reasons, are located a couple of miles, more or less, from the land. Because of the distance from home to work the hired men or owners use up time, equal to about one day a week on the road, leaving a net of but five working days in the week. There are too many five-day, four-day or even three-day farms where the buildings are right on the land. It is easy for some men to average a day or more in the week in useless trips about the country. A six-day farmer will usually manage to locate on a six-day farm.

The astronomers, some of them at least, insist that the food crops and the spots on the sun have a kind of connection. The idea is that the spots are heat storms, and the more of these storms the milder the weather on the earth. Of late the spots have been larger and more numerous, which would apparently indicate a mild winter. It is claimed that the spots, or heat storms, have regular periods of activity and decline extending through a long term of years.

When the spots are large and plenty the seasons would be long and average warm, and the crops of the world good. The facts do not wholly support the claims of this theory, but there may be something in it. At least it is easier to believe in the sun-spot signs than in the goose-bone test, the woodchuck prophecy and other ancient but discredited authorities. The prophet of sun spots is at least up to date.

Farmers in Ontario have been complaining all the season that not even the newly arrived immigrants could be hired, but it is noted that the highest wages offered were \$7 per month, which is not very attractive for men who could hire out to American stockmen for at least double the pay suggested. Farmers cannot afford to pay the high wages obtained in some other industries, and, because of the low cost of country living, there is no need that they should. But fairly steady employment the year round is the only way in which the best men can be secured. It is the poorest workers that are most often out of a job, and it is such that are most likely to be hired for temporary work in the busy season. The Ontario government has already sent agents to England to recruit laborers for next summer, promising situations on arrival, but there is a prospect that a good number of these \$7 per month men will very quickly find their way across our boundary line to the South.

The Skeleton at the Feast.

The Thanksgiving sermon of Rev. Dr. Morgan Dix at Trinity Church, New York, was rather a pessimistic one, and seemed hardly appropriate to the occasion. He said contrition ought to go before Thanksgiving, which looks as if he wanted a return of the old New England Fast Day, which was abolished because it had become a secular holiday, rather than a time of humiliation, fasting and prayer. However, Dr. Dix pointed out the evils that we were laboring under, rather than the blessings we were enjoying, and scored both organized wealth and organized labor, until his hearers might have recalled Goldsmith's lines:

"I'll fares the land, to hastening ill's a prey,
Where wealth accumulates and men decay."

The dissoluteness of society was dwelt upon as well as the decay of honesty and the disregard for the sanctity of human life.

He also condemned women talkers, women preachers, women agitators and the daimoners for woman's rights, and this seemed to be hardly in accordance with the spirit of the age. But he forgot to name the many salinly women in all denominations who are laboring to better the condition of the poor and the suffering and the widow and the orphan. Nor did he mention the vast sums that are given away for philanthropic purposes. Doubtless there is a great deal that is bad in the world, but there is enough good to more than counterbalance the wickedness, and this, it seems to us, should be discouraged about on Thanksgiving, rather than the vice that might be more appropriately lashed during the Lenten season. There is a time and a place for all things, and we do not want a skeleton at a religious festival if we have any place to hide it.

An Evening Milk Route.

The novel feature of a milk route operated by L. L. Sellew of Natick, Mass., is the fact that a large number of the customers are supplied in the evening instead of early in the morning, as is the more common practice. The present evening route was originally a morning route, but was changed in order to permit a morning route in another town.

When the change was made it was feared that many of the customers might fail to be satisfied with the new hours of delivery. But very few have been lost on this account. "The main difference," said Mr. Sellew, "is that the night's milk is taken at the time to the customers instead of being kept until the following morning. Most milkmen in this vicinity peddle out the morning and night's milk of the preceding day. We deliver the morning and night's milk of the same day, and the product thus reaches the consumers in a fresher condition than usual. Of course, there is a prejudice in favor of the morning delivery, simply because the consumers have become used to it, and because they imagine they are getting the milk of the same morning, when, as a fact, it is that of the day before in most cases. Our milk is cooled at once after milking, being run over a cooler filled with ice-water, from which it goes into the bottles. Prompt cooling fits it to keep for at least twenty-four hours in hot weather. So far we have had no trouble from complaints of milk not keeping until wanted. We regard the experiment as a success, although the route has not been in operation long enough to test the new plan completely."

The Sellew farm is one of the best in the vicinity, comprising forty-three acres of heavy, moist soil, especially adapted to grass. Seldom is there a failure of the hay crop on this land, as drought affects it very little. There is a silo which holds about two hundred tons. It is a rectangular in shape, twenty-five feet deep and about forty feet long, composed wholly of masonry cemented. The ensilage keeps reasonably well in this structure of somewhat unusual shape. The stock consists of thirteen cows, mostly Holstein grades. The grain ration does not differ from that commonly fed in the neighborhood, being composed of shorts and milfeed, corn meal and gluten.

Hints on Buying Grain Feeds.

The inspection of feeding stuffs during the past winter has brought to notice a number of common adulterations. A few of these can be readily detected by the purchaser if he will make a careful examination of the material, and some of the principal ones are described in a recent pamphlet of the Rhode Island station.

The usual adulterant of cottonseed meal is the hull of the seed. This adulterant was formerly easily distinguished by the black appearance, but now the hulls are so finely ground together with waste cotton that they can be recognized only with great difficulty.

Gluten feed has been sometimes sold as gluten meal. As the meal contains from eight to ten per cent. more protein than the feed, one should be sure that he is really obtaining gluten meal. Gluten meal is a homogeneous, yellow, granular substance, and its general appearance is quite different from that of the feed.

In one case dried distillers' grains were being sold as gluten meal. Judged by the analysis, the distillers' grains are as valuable as the gluten meal, yet the fact that they were being sold as a gluten meal constituted a fraud. It would have been easy enough to have distinguished them from gluten feed, but to sell them as gluten meal was even more absurd. Distillers' grains are much darker than gluten feed, and for the reason that gluten feed is made entirely of corn refuse, and the distillers' grains of

a mixture of cereals, the two can be distinguished by the barley hulls which are found in the distillers' grains but not in the feed. Some of the "mixed feeds" found upon the market have been found to be grossly adulterated. A guaranty is required in Rhode Island for this class of goods, if not composed solely of pure wheat bran and middlings, and it is proposed to see that the manufacturers and dealers comply with the requirements of the law.

If coarsely ground, the hulls, corncocks, etc., used in adulterating "mixed feeds" may usually be detected by taking a small handful of the feed and spreading it in this layer upon the palm of the hand; if finely ground, however, the corncocks are difficult to distinguish. If hulls are present they will appear as small, shiny particles, much lighter in color than the brown particles of the bran. In this case care must be taken not to confuse the germ of the wheat with the hull, for the germ is one of the valuable parts of the feed. Its color is nearly like that of the hulls, its high content of fat giving it a glossy appearance. The hulls, however, are hard and not easily broken, but the germs are soft and can be split readily.

The other feeds which have been adulterated are byproducts from starch and hominy manufacture. These are sold under several names, such as chops, hominy feed, hominy feed and hominy chops. These feeds are adulterated with corncocks and corn meal. The pure feed has a smooth slightly oily feeling when rubbed between the fingers, and if adulterated it will feel more granular. Yellow corn meal can be detected by the yellow particles of the kernel, which are not found in the pure feed. Corncocks cannot be so easily detected.

Angoras in Massachusetts.

The fence problem for Angora goats is solved by J. B. Jenkins of Essex County, Mass., in the *Rural New Yorker*, as follows: I am a farmer in a small way compared with Western ideas. We keep cows for butter-making, hens, geese, turkeys, sheep and last but not least, Angoras. I have a rocky hilly pasture of more than one hundred acres; bushes of all kinds, including birch. For years we have mown the bushes, but seldom kill any, but now that the Angoras have come, the bushes have to stand back. They are the best paying of all stock enumerated with us, and they have come to stay. It is bushes with them, and for a relish grass; they are always fat, ready for the butcher, and no better meat do we have on our table. No sickness, none killed by dogs; they come to their house every night without help. The most care we have is dipping them twice a year. The kids are hardy. We have saved one for every doe that kids. Most of them kid in January; they are out every day except when rainy.

Our fence is stone wall and two wires; posts are on pasture side. That is our way for cattle. For Angoras and sheep, sticks are driven in the wall and nailed or post or stake; top of that are put small poles and brush; if no wall then woven wire is best. We sell the kids for \$6, the does \$8, and supply the neighbors who have none with meat. Our cattle and Angoras go together in pasture. With us there is more real gain in one Angora than two sheep. The dogs often kill the sheep. Forty cents a pound is about the price for unwashed fleeces; ours average about three pounds. The kids carry their fleeces till the next year in April.

Our Senior Senator.

The New York Evening Post has a rather good article on Senator Hoar's recently published reminiscences, scholarly of course and abounding in pertinent references, but still rather facetious in its general tone. It says that the recollections picture Mr. Hoar as "he has long made himself known—an attractive compound of nobility and prejudice, shrewdness and credulity." His egomism, it tells us, is of the most charmingly naive type. "Summer's was said to like a blow in the face, so gross and assertive was it. Senator Hoar's is amiable and almost childlike—a 'good boy,' showing his Sunday-school prize to a fond mother."

The Post pokes a little fun at the number of great men Senator Hoar has discovered in Worcester County, and says they seemed to have bloomed about his pathway as thick as daisies. Then it refers to his attack on Ben Butler, which Mr. Hoar claims was the one exception to his abstineness from strong partisanship and to his refusal, though he was president of the alumni, to walk beside Governor Butler in a Harvard Commencement procession. It makes the following extract from the reminiscences:

"My place was filled by Joseph H. Choate, who discharged the duty, of course, much better than I could have done it." The Post does not know whether this statement is made in innocence or malice. Neither, we should say, but in perfect candor, for the Senator is neither malicious nor foolish, though he does have mistaken views of many things concerning his own party with which he is at variance concerning its policy in the Philippines.

Even great men have weaknesses, and Mr. Hoar points this out in his allusion to James Russell Lowell, when he was a delegate to the Republican Convention of 1876, and Mr. Hoar wanted him to give his support to the nomination of Wheeler for the Vice-Presidency. The Senator said to Mr. Lowell: "Mr. Wheeler is a very sensible man. He knows the 'Biglow Papers' by heart." There was no reply given to this, but Mr. Hoar happened to hear the poem afterwards to a gentleman who sat beside him, presumably the Rev. James Freeman Clarke: "I understand that Mr. Wheeler is a very sensible man."

The charm of these reminiscences lies in their informality. They are not labored, but appear like the free expressions of thoughts to an intimate acquaintance, and we have no doubt the senior Massachusetts Senator regards the whole world as his friend, though he often takes the liberty of giving both Republicans and Democrats a little friendly advice not untinged with severity and reproach. Not that he loves his party less, but that he loves the United States more. This is not saying he is always right.

I am a beekeeper, first, because of a natural fondness for honey, a fondness that never relinquished its hold, and I never expected that it will. I remember when I was a boy how I used to rummage the wild bee-hives' nests to get even one drop of nature's sweet, and it made my heart glad. As manhood advanced so also my ideas; so then to my joy I bought a box hive of bees.

My second reason for being a beekeeper was that my instinct of nature led me on to search for, and, if possible, find out the mystery of mysteries connected with the honey bee. In those primitive days—at least primitive they were to me, as I had not the opportunity of studying standard

works on the honey bee and bee journals that my fellow beekeepers have today—every moment and every hour of my time that I could possibly spare from other pursuits was taken advantage of in the study of my little workers, and I thus added to my joy and knowledge.

My third reason for being a beekeeper was the great pleasure of having honey (nature's sweet) on my table three times a day the whole year round, and in being able to treat my friends and neighbors to a feed of honey when they came in, and in hearing the hum of the bee in the apple tree, clover field and elsewhere.

My fourth reason for being a beekeeper was the "financial" side of the question, as I had an idea at one time that there was more money in beekeeping than any other line of business on the face of this broad earth. But, while my taste for honey is as keen today as ever, and my appetite for research in the mysteries of the honey bee is as ravenous as it was a quarter of a century ago, and there is little even yet afforded me more pleasure than to be able to treat my friends and neighbors to a little honey, and to hear the merry hum of those dear little honey bees when they are in the clover and buckwheat field, I say that I am slightly disappointed in my fourth reason for being a beekeeper, viz., the financial side of the question. True, with proper care and management on the part of the manipulator, there is money in beekeeping, but for the one who has made a pile out of it a dozen have made a failure. For my individual part, I have nothing to complain of in having taken it up as a pursuit. I like the honey, I like the bee, I like to work among them, and I like to see the dollars come in as the result of my being a beekeeper.

Wandering between two worlds, one dead. The other powerless to be born.

And that "multitudes of earnest thinkers are of the same class described by Clough's melancholy lines."

"Fat, drink and die, for we are souls bereaved; Of all the creation as under heaven's wide cope. We are most hopeless, who have once most hope, And most believeless, that had most believed."

Arnold's Dover Beach is in the same strain.

The current literature of France, Germany, Italy and Scandinavia, as revealing the thought of some of the best educated minds of the modern world, indicates, as your distinguished preacher of last Sunday has told us in his "Gospel for an Age of Doubt," that the spirit of our time is one of "respectful unbelief." But this is, we feel, only a temporary condition. The secret needs and longings of the soul, waiting, it may be, for some clearer corroboration of the reason which is sure to come, are doubtless lost, for a time, in a vast wealth of practical philanthropies, and a service for man which is so strongly genuine and so full of solid satisfaction that the native hunger of heart and mind is not keenly felt. In our own land we are apparently so satisfied with material prosperity—commercial and intellectual—that we are not greatly so-of any great need. I think it is fair to say that the American people at present is very much preoccupied with what she regards as her peculiar Apostolic Mission to meet and answer the material, and perhaps, in a degree, the intellectual wants of all the world. In this mission, and in her great prosperity and success, life is complacent and well satisfied. But into such an age, and to such a spirit some last day of its feasting must surely come. Human life cannot go on for long in unbelief or doubt, nor can man live very long by bread alone. Some day the divine cry shall be heard: "Life is athirst." "Athirst for the living God."

It is true that there are multitudes who do not require any suggestion that they are athirst. Soul-searching experiences have come upon them, and they know only too painfully how intense and vast is the need of their lives. Bitter disappointments, innumerable losses, miserable approaches, accompanied the dancing and singing of the people welcomed the great "Hosanna Day." Immediately a procession of priests was formed to bring water from the pool of Siloam which flowed at the foot of Mt. Moriah, just outside of the city walls. When the procession returned bearing the water in golden bowls the new day had come. The priests ascended the steps of the temple holding aloft the water of Siloam and singing the "Songs of Degrees." "Our feet shall be washed in the blood of the Lamb, and to abide with him until the world is no more." With the crowd until the whole city rang with the words: "Oh give thanks to the Lord, for He is good, for His mercy endureth forever." With the first note of dawning, with its rays light the temple of Oliver, the priests sounded the silver trumpets three times, and the answering shouts of the people welcomed the great "Hosanna Day."

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One of the marks of the progress of civilization is man's consciousness of need. Find out in what is it that the people esteem to be the need of life, and you have a measure of its advance. It is only the cry for shelter and food that we most assurely give, is it not a serious mistake, to think on the other hand, to think that in John's life, even though he may lean upon the Divine Master's bosom, that his spiritual wants are perfectly met and fulfilled? As a matter of fact, but no one of all these things can be said to be perfectly met and fulfilled. As a matter of fact, the more we are happy and satisfied in our charities—our sacrifices and libations—and there has never been more a sense of the wealth of lives that have been lived than in the past, we have always been more ardent and anxious for a fuller life. The need in the life of a St. Francis or a Paschal may not be quite the same as that of a Richard Baxter or a Jerry McCaulley, but it is none the less a real one, and the one as well as the other

The Markets.

BOSTON LIVE STOCK MARKETS.

ARRIVALS OF LIVE STOCK AT WATERTOWN AND BRIGHTON.

For the week ending Dec. 9, 1903.

	Sheep	Goats	Pigs
Cattle Sheep Suckers Hogs Veal			
This week... 4002 18,945 40 32,392 1584			
Last week... 4017 18,619 57 27,978 1646			
One year ago... 1676 9429 29,470 299			
Horses... 419			

Last week... 4002 18,945 40 32,392 1584

One year ago... 1676 9429 29,470 299

Horses... 419

Per cent.

Our Homes.

The Workbox.

A CROCHETED VEST.

The vest is for women, and is very nice to wear under a coat, or as a protection from cold at any time.

Two hanks of Scotch wool will be needed, one piece of braid for binding, one-fourth of a yard of silk, for facing the fronts, ten small brass buttons, two balls of crocheted silk for working, one-quarter of a yard, crinkle-edge broad elastic, one long crocheted hook, about the size of a No. 13-bone knitting needle, one spool of twist.

Chain 32 stitches, turn, and putting the needle into the second stitch, put yarn over and draw it through the stitch. Keeping the chain until there are 34 stitches on the needle. Now put yarn over and draw back through the stitch just formed and the one next on the needle. Continue to the end of the row. This makes the regular trout or afghan stitch, with which most persons are familiar. It will be seen that to make one complete rib requires crocheting twice across; so as to simplify directions, we will speak of narrowing and widening by ribs rather than rows.

Having started with 34 stitches on the needle and crocheting twice across to form a rib, now widen every second rib at each end for 4 times; this gives 8 ribs. Make 22 ribs without widening. Now widen 1 stitch at both ends of rib every third rib for 4 times. Crochet 27 ribs straight. This brings work to shoulder. Take one-third of the stitches for one shoulder, bind off one-third for the neck, and crochet on the next third for the other shoulder. Crochet 8 ribs straight, then widen on the front edge every third rib 1 stitch for 5 times. Now widen both front and back edges 1 stitch every other rib 7 times, or 14 ribs. Make a chain of 12 stitches on the back edge and take up 10 stitches as at the beginning of the work. This gives the under-arm extension. Widen every rib on the front edge for 18 ribs, crocheting straight on the back. Make 1 rib without widening. Then on the edge of the right side of the vest, after crocheting the first 2 stitches, make a chain of 2 stitches between the second and third stitches to make a little opening for the buttonhole. Narrow on the front edge 1 stitch every third rib, and make chain for the buttonhole after every sixth rib. Do this for 22 ribs. Now bind off 21 stitches for the under-arm seam, and beginning to crochet from the twenty-second stitch narrow 1 on the front of every third rib, crocheting back to within 1 stitch of the back edge every rib. Do this for 6 ribs, remembering to make the buttonhole where it should come in reference to the others. Bind off. This completes the front. Take up stitches on the opposite shoulder and crochet the other front to correspond. Sew up the vest at the under-arm seams. To work little stars all over vest use knitting silk. The back does not have the stars.

Face buttonholes with a narrow stay of muslin. Underface the fronts with bias silk or satin. Work the buttonholes with twist. It is well before binding the fronts and armholes to overcast the edges with the yarn to prevent stretching in binding. Neck measure when bound should be 31 inches, armhole 17 inches, length of front 7 inches. —EVA M. NILES.

Bed Hand Bag.

Now that bed-work is so popular, a nice present for Xmas would be one of these hand-bags. Black is pretty, but any color may be used.

Procure two ounces of pure thread crochet silk, one large bunch of black-jet beads and a No. 2 steel hook.

String the beads on silk before you begin to crochet, and always push the bead on the silk before you take the stitch.

Chain 120, join in a ring, use the short crocheted stitch and crochet 2 plain rows; when you will the second row, take up both stitches in the top of the first row.

3d and 4th rows—Plain with beads. Start the squares by crocheting (*) 5 short crochet and 5 stitches with beads; continue this for rows, when you will have a complete row of squares.

Start the next row with 5 stitches with beads, then 5 short crochet, and continue for 5 rows.

You will find you have a plain square over a beaded one; repeat from (*) till you have 18 rows of squares, which you may finish with 2 plain rows of beads and 20 rows of short crochet without beads.

This will make a bag 9x7 inches. In all bead-work the beads will be on the wrong side of the work, and the article being made must be turned after it is finished. For a finish across the bottom make a fringe of 5 squares.

Start the next row with 5 stitches with beads, then 5 short crochet, and continue for 5 rows.

Strung the beads on silk before you begin to crochet, and always push the bead on the silk before you take the stitch.

The Dressing-Sack, Woman.

There is a popular delusion to the effect that household tasks require slippered garments and unkempt hair. Let the froway ones contemplate the trained nurse, and in her spotless uniform with her snowy cap and apron, and her shining hair. Let the doubting ones go to a cooking school, and see a neat young woman in a blue gingham gown and a white apron prepare an eight-course dinner, and emerge spotless from the ordeal.

The woman who puts on an apron, over her dressing sack, by that act openly proclaims that the thing would be better if it was belted in. Then why not a shirt waist? Does one ever see a trained nurse in a dressing sack, even when she does heavier work than any other woman is ever called upon to do? If a woman in the uniform of a trained nurse can do the manifold things assigned to her calling, surely the laundress and the cook do not need a dressing-sack?

There is a cynical adage which runs thus: "Strangers for help, friends for advice and relatives for nothing." Few of us will be bold enough to say there is no truth in it, and the reason is not far to seek. Who should help us if not those who always see our best side? Strangers think us charming, friends admit, but pardon our faults, and relatives fight with us.

We make our houses spotless for a stranger, but friend can take us as we are. For the new acquaintance, there is purple and fine linen, while we offer our friends cold potatoes and remnants of pie. The solid silver and dainty embroideries are put away for the stranger, while one's husband, who, in a way, is a relative by marriage, eats left-overs' out of nicked dishes, and contemplates a dressing-sack between mouthfuls.—The Pilgrim.

Keep the Windows Open.

You would not think of drinking stale or poisoned water, would you? You know that if you were to be shut in an air-tight compartment death would result. Of all the necessities to life, you can live longer without any of them than air. Impure air and darkened apartments are the cause of an untold number of deaths annually. You know that on a sunless day, with a close atmosphere, you are out of sorts at the best, if you are lucky enough to escape physical ailments, while you are mentally depressed.

But once let the sun shine brightly and clear the atmosphere how different, now much better you feel in every way.

Cold weather is coming and when you are tempted to close up the house as tight as it can be made, remember these things, and don't do it, especially at night. Keep the windows in the sleeping apartments open enough to at least give you sufficient fresh air. A cold room does not indicate that it is healthy, far from it. A sleeper will soon breathe up all the fresh air in a room, and if there is not a constant supply of fresh air, he simply breathes over and over again the poison thrown off by his lungs. And the breathing of this vitiated air only tends to lower the temperature and vitality of the system so that it is not as capable of withstanding the rigors of winter. Fresh air is healing to the body; in fact, upon it depends the combustion of the fuel in the body and by which we are kept alive, which we should always bear in mind.

Even with open windows during the night, bed chambers and bed clothing should be thoroughly aired each morning, and allowed all the sunlight possible. During sleep, not only do the lungs throw off more poison than during the day, but it is especially so with the body in its relaxed condition and when the pores are all open. During sleep the body should have plenty of covering; better to have too much than not enough, both to induce deep slumber and to keep the skin moist and the pores

open that they may have the opportunity to rid the system of poison. Bear in mind that death would follow the closing of the pores.

Fresh air in cold weather will cost money, as more fuel will be required, but it will be economy, for if it does not save sickness and doctor bills, and which it most likely will do, you will feel better and the stronger for it.—Cooking Club.

As They Be in London.

In the dining-room of nearly every hotel in London one finds a round table filled with cold fowl, cold ham, roast beef, tongue and mutton, cold lobster and salmon, with mayonnaise and many "chandoids," so masked with jelly and so attractively garnished that one knows before tasting that they must be good.

At breakfast and lunch time, and even when in need of a bite before going to bed, the true Englishman makes a tour of inspection around this table in order to select the particular palate tickler of his own fancy.

But the usual breakfast of the ordinary mortal is tea, toast, muffins or very hard cold rolls, with eggs or bacon—and the inevitable jam. This jam is always obtainable at any English table, and it is of many varieties, orange, plum, or strawberry predominating. When the unspoiled American comes along, however, he is served with boiled coffee, warmed-over rolls, ice-water and all the different kinds of jam at once. He swallows this, with eggs or bacon, and then he wonders why his digestion doesn't digest. The boiled egg is the true test of patriotism. The Englishman eats his in the proper manner, of course; he sets it up in a tiny cup, breaks the end, adds a dash of salt, and proceeds to absorb it most daintily with a tiny spoon. But the American asks for two, and he wants them broken into a glass tumbler or goblet, and he then chops them furiously, adding salt, pepper and butter until they are thoroughly mixed into a delicious mess, which tastes better than it looks. —Youth's Companion.

three are called into activity to replace them.

If, then, we would keep the "noble" elements of the body in condition to perform their duty well and to resist the encroachment of the "common" elements, we must exercise them. This does not mean that the man of fifty must keep up the athletic pursuits he followed at twenty, or that the man of seventy must toil with his brain as he did at forty. The inevitable has begun; the muscles and the brain are less sturdy than they were, and can do less; but they can do much, and must not be allowed to degenerate by non-use.

The man who retires from business at the beginning of old age and suddenly exchanges an active life for one of sloth, commits a fatal blunder. If he lays down the burden of business he must take up some other less exacting occupation to keep from rusting.

Exercise, mental occupation, fresh air, moderate eating and avoidance of excesses of all kinds, either of activity or of idleness—these are the brakes on the wheel of time which prevent a precipitate rush into old age. —Youth's Companion.

A Musical Atmosphere.

It is characteristic of musical people to live in an atmosphere wholly their own, to be apart from the mad rush of the commercial centre, which by the enormous business projects carried on at the present day necessitates closer application than ever before, and is undoubtedly shortening the lives of an innumerable army of toilers. This unfortunate spirit of restlessness enterprise which scientifically is named "polyphragmose," and which at present dominates a greater part of the human race, fortunately does not affect the musical fraternity.

That the followers of the "tone-art" live in serene blissfulness and contentment, a sphere of existence that has in little of the grind of a business career, little of that nerve-racking anxiety which slowly but surely saps the vitality and conducts the victim to an early grave, is obvious to any who will study the lives of the great masters of music.

The following list embraces a few distinguished names of musicians who have attained an advanced age: Wagner seventy, Ole Bull, seventy, Meyerbeer seventy-three, Handel seventy-four, Liszt seventy-five, Tartin seventy-eight, Benedict eighty-one, Verdi eighty-seven, Reichardt eighty-seven, Bouchez ninety-one, Hartman ninety-five.

From the above facts it seems evident that the prolongation of life can best be attained by an occupation along the lines of the mental zone, and the study of music is undoubtedly one of the means to obtain the desired end.

Domestic Hints.

FRENCH PAN CAKE.

Mix and sift one cup flour and quarter tea spoonful baking powder together. Add three-fourths of a cup of milk or thin cream and one egg beaten very lightly; add one tablespoonful of vanilla and one-third cup English currants, previously washed and dried. Fry same as griddle cakes, butter slightly and spread with currant jelly; sprinkle sugar over and serve at once. The jelly should be beaten with a silver fork before spreading on cakes.

LAMB'S FEET, A LA DUXELLES.

Braise and trim the feet, cover them with a coating of D'Uxelles sauce, sauté them, then cover them with a coating of bread-crumb garniture for day wear. The overdoing of this pretty adjunct in the coarsest and cheapest of laces has driven the real beauties of lace and embroidery to the wall.

* * * A lace collar has to be something exceedingly fine and rare to be much longer tolerated as an outside garniture for day wear. The overdoing of this pretty adjunct in the coarsest and cheapest of laces has driven the real beauties of lace and embroidery to the wall.

* * * Gloves knit of white angora and other soft wool are not likely to be as smart this winter as they were a few years ago for city wear. The style has been on the wane for the past two seasons, and while not absolutely past, is no longer fashionable.

* * * Jet and paillette fringes, or that of chenille, are more enthusiastically accepted than any others thus far, and are modestly used as a finish for any of the superby embroidered or spangled trimmings with which the shops are inundated. Innumerable galoons, motifs, brads, laces and bands are to be had, and in almost every necktie adds greatly to their desirability.

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* * * For general city wear it is doubtful if the belt coat for men will be fashionable this winter. The ready-made clothing shops have taken them up and smart styles seldom survive over-popularity. However, except on cold and stormy days, the ulster and semi-ulster types have never been town coats, for they are not, of course, in any way dress garments, and when of rough material do not look well with silk and satin or formal cloths.

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my Fairy Queen.
—E. H. Sothern.
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in her hands,
miserable.
—Tennyson.

Doubt.

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Gombault's
Caustic Balsam
All That
Is Claimed to Be.
STAMFORD, Oct. 1, 1902.

The Lawrence-Williams Company, Cleveland, O.
I have used Gombault's Caustic Balsam for
some time for many complaints and always found
it all that you claim for it.

RADWAY'S READY RELIEF FOR PAIN

DYSENTERY, DIARRHOEA,
CHOLERA MORBUS.

A full teaspoonful of Radway's Ready Relief
in a half tumbler of water repeated as
the discharges continue, and a funnel saturated
with Ready Relief placed over the stomach and
Times.

bowels, will afford immediate relief and soon
effect a cure.

Radway's Ready Relief taken in water will, in
a few minutes, cure Cramps, Spasms, Sour Stom
ach, Nausea, Vomiting, Heartburn, Fainting At
tacks, Nervousness, Sleeplessness, Sick Head
ache, Flatulency and all internal pains.

There is not a remedial agent in the world that will cure fever and ague and all other malarious
fever and other fevers, aided by RADWAY'S PILLS, so quickly as RADWAY'S READY RE
LIEF. Sold by druggists.

RADWAY & CO., 55 ELM ST. N.Y.

Poetry.

MY LOVE.

(Air "Robin Adair.")
Dearer each day to me,
Dearer to me,
Doth my beloved grow;
No one as he
Can e'er so perfect seem;
He is my only dream,
He is my only dream,
My only dream.

Never were eyes like his;
Beaming with love,
Bright as the dazzling sun,
Soft as the dove.

Speaking of thoughts untold,
As they will love unfold,
Sweet as days of old,
Sweet as of old.

Love beameath from his gaze,
Love all for me.

Oh! how I do adore
And worship thee.

My heart shall e'er be thine,
For thee my life will shine,

Thou e'er will be mine,
Thou will be mine.

No one can ever part
My heart from thee,
E'en though thou cease to love,
My love shall be.

Still fond and true to thee,
Ever for thee,

Ever alone for thee,

Ever for thee.

—MARTHA SHEPPARD LIPPINCOTT.

Moorestown, N. J.

WINGS OF A DOVE.

At sunset, when the rosy light was dying,
Far down the pathway of the West,
I saw a lonely dove in silence flying
To be at rest.

Wings of air, I cried, could I but borrow,
Thy winging wings, thy freedom biest,
I'd fly away from every carefull sorrow
And find my rest.

But when the dusk a flimy veil was weaving,
Back came the dove to seek her nest,
Deep in the forest where her mate was grieving
There was true rest.

Peace, heart of mine! no longer sigh to wander,
Lose not thy life in fruitless quest,
There are no happy islands over yonder;
Come home and rest.

—HENRY van Dyke.

THE OTHER SIDE.

Climbing the mountain's shaggy crest,
I wondered much what sight would greet
My eager gaze when'er my feet
Upon the topmost height would rest.

The other side was all unknown!
But, as I slowly tolled along,
Sweeter to me than any song
My dream of visions to be shown.

Meanwhile the mountain shrubs distilled
Their sweetness all along my way,
And the delicious Summer day
My heart with rapture overfilled.

At length the topmost height was gained;
The other side was full in view;
My dreams—no one of them was true,
But better far had I attained.

For far and wide on either hand
There stretched a valley broad and fair,
With greenness flashing everywhere—
A pleasant, smiling, homelike land.

Who knows, I thought, but so 'twill prove
Upon that mountain-top of death,
Where we shall draw diviner breath,
And see the long-lost friends we love.

It may not be as we have dreamed,
Not half so awful, strange and grand;
A quiet, peaceful, homelike land,
Better than in our visions gleamed.

But now along our upward way
What beauties lurk, what splendors glow!
Whatever shall be this we know
Is better than our lips can say.

—John White Chadwick.

WOMAN'S WORK.

To wash and bake, to mend and make,
The steps of weary toll to take,
To cook and sear, to dust and sweep,
And all the house in order keep.

To scrub and wash, to iron and
Duties done through day before,
Yet know that in tomorrow's train
The same old tasks will come again

And often to herself to say
The old, old lines in weary way—

"From dawn of till setting sun
Woman's work is never done."

To watch and pray, to gladly take
Love's crosses for love's crowning sake,
To lay and grieve, to smile and weep,
Her deepest thought in silence keep.

To teach and lead, to hope and trust,
Have betrayed, as woman must,
Gently chide to cheer and bless,
And bear with patient tenderness

Her burdens all, not shrink away,
But bravely look ahead and say—

"From dawn of till setting sun
Woman's work is never done."

THE LOVERS.

The sky above was tender blue
And down a path a foolish two
Were strolling on together.

He held the hand in his tight
And boldness well amazing,

And as they sauntered full in sight,
All eyes were a-gazing!

It happens not of things they talked
Private, ordinary;

The fact was that they walked

A different language—very!

Perhaps, because their heads were turned,

They seemed themselves sequestered,

And they right could not discerned,

And right gaudes pestered.

"How silly!" laughed the grass and breeze—
And passed each other over;

"How silly!" scoffed the honey bees—

And straight caressed the clover.

"How silly!" piped the f-tattered tree—

And fell to biling sweetly;

"How silly!" quoth we all, in jibe—

And envied them, completely!

—December Smart Set.

Gombault's Caustic Balsam All That
Is Claimed to Be.

STAMFORD, Oct. 1, 1902.

The Lawrence-Williams Company, Cleveland, O.
I have used Gombault's Caustic Balsam for
some time for many complaints and always found
it all that you claim for it.

WILLIAM F. PEEBLES.

MASSACHUSETTS PLOUGHMAN, SATURDAY, DECEMBER 12 1903

"Sils, come quick! All is not well with poor
Jim."

"They approached the couch and looked down
upon the face. The tired look had disappeared.
There was a smile instead. Cousin Jim was no
longer ill—he was at rest, peacefully at rest.

"The city relatives wailed when his will was
read. The good and true ones who had loved
him to the end, the kindly ones who lived in the
little house at the end of the maple lane—Jim
had given all to them.—H. S. Keller, in New York
Times.

bowels, will afford immediate relief and soon
effect a cure.

Radway's Ready Relief taken in water will, in
a few minutes, cure Cramps, Spasms, Sour Stom
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The Horse.

Honesty in Horse Selling.
It is a well-remembered saying, originating from a man who had the most practical experience in the world, that, while you can fool some of the people all the time and all of the people some of the time, you cannot fool all of the people all of the time. It works just this way in the horse business, and the man who thinks that he can send a consignment of horses into a sale ring year after year and misrepresent them or send in his horses to sale after sale and protect them by by-bidding, will eventually get fooled himself, instead of fooling the general public.

This extends farther than that, for the man who misrepresents the horses that he has for sale creates "one knocker" against his stock for every man he sells a bad one to. It is a well-accepted fact that a man forgets a good turn quickly but remembers a bad one "forever," and there is probably no business where this holds good any better than in the business of buying and selling horses. The fact that so few men remember the good turns that have been done them is rather poor encouragement to a man to try and establish a reputation for honest dealing in horse selling, but nevertheless it will eventually prove a winner if the buyer can only be induced to believe that it is actually possible for a man who has a horse to sell to tell the truth.

It may take too long for a seller to establish this reputation, and he may get so nearly "broke" in the attempt that he will "not be so particular" after a while, at first only concealing minor matters, but eventually adopting the methods of the other class of horse sellers, and actually trying to trick every man that he sells a horse to, or else result in his quitting the business altogether. In the latter case a good man is lost to the business, while in the other instance another rogue is added to the game to still further hurt the reputation of the business of handling and selling horses, and after all it is more the buyers that are to blame than the sellers. It would be the duty of every man who buys a horse to never miss an opportunity to tell others the name of a man who has sold him a horse and represented the animal just as it was, and in doing this the buyer will do himself even more good than he actually does the other fellow, for he will help to keep the straight seller in the business, and will incidentally "knock" the business of the man who is ready and willing to cheat a man in a horse deal at any time.—Horse Breeder.

A horse may refuse to start just from "pure cussedness," or there may be some other cause which a skilled driver may find out. First of all look to the bit, see that it does not hurt the gums, inspect them. Then look to the shoulders under the collar, and feel if the animal flinches from pressure, for there may be injury there, even without the presence of a wound, or the collar may press on the windpipe. This would make a horse in harness balk. If no manifest reason for not starting can be discovered proceed as follows: While speaking to the animal, pass the hand down the front leg to the coronet, lift the hoof up pretty high, and then, with anything, as a stone, strike each nail in the shoe, with a final tap on the frog of the hoof, then say something to the horse as you suddenly let the foot drop to the ground, and the driver gathers up the reins sufficient for the animal to feel the bit. The horse's attention will have been diverted by what has been done, and he will often start off at once, if it has been a matter of ill-temper. This device has been rarely known to fail, if the horse feels that he is master of the load behind him.

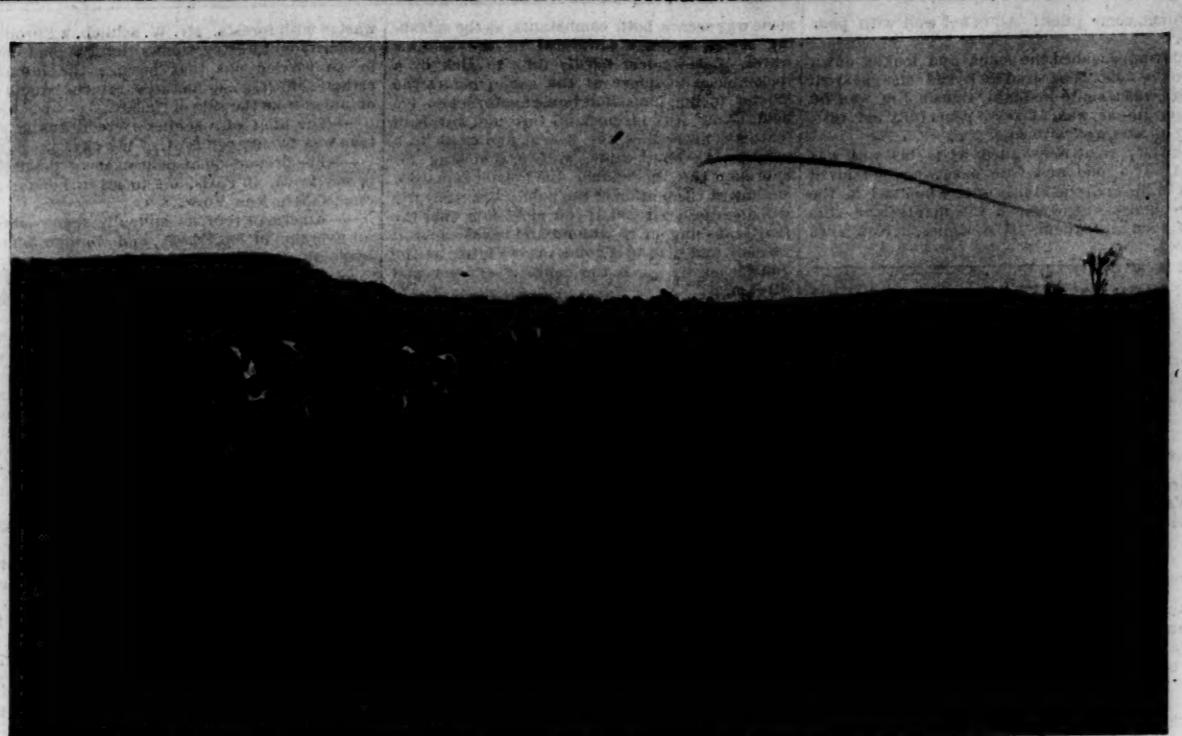
To break a stable-kicker, a plan, often very successful, is to give him a sandbag to exercise upon. Fill a sack half full of sand and swing up to the ceiling with a rope, so that the sack will hang just where the heels of the horse will have good play upon it. Tie the horse in a stall with a good strong rope and let him kick. At the first kick the bag will swing away and return, giving the horse as good as he sent. For the next minute or so there will be a battle royal, but the sack will hold its own, returning all it received with interest.

Leave the sack behind him for a week or so and then remove it. If he ever tries to get into his old habits, give him another punch bag to exercise with.

From all the American tests, and those which have been made in Europe, it appears fair to say that there is no very marked advantage in grinding grain for healthy horses with good teeth.

Lettuce and Cucumber Diseases.
Some of the best work ever done for greenhouse farmers has come from the under glass experiments at Amherst, Mass., under charge of Dr. G. E. Stone. The success and popularity of steam heating or sterilizing greenhouse soil in good measure owing to the station experiments. With permission of Secretary J. L. Ellsworth, the following illustrated descriptions are given of the most troublesome diseases of two leading indoor crops.

TOP BURN, OR TIP BURN.
The above trouble is not caused by any organism, but is due to a lack of proper conditions in the lettuce house. Top burn is merely a wilting of the young, tender leaf extremities, which causes them to dry up and turn brown or black. This greatly disfigures it, and injures to a considerable ex-



PASTURE SCENE ON THE PINES DAIRY FARM. HERD OF B. W. McKEEN, OXFORD CO., ME. See descriptive article.

The temperature conditions are governed entirely by what they think the plant is capable of enduring. Where a rapid growth of lettuce takes place, in consequence of any form of stimulation, care should be taken to govern temperature conditions, especially those of night temperature. Lettuce plants, like all others, make most of their growth during the night, and the character or texture of that growth is dependent to a large extent upon temperature. High night temperature will cause rapid growth and a delicate texture, and lower temperature will give rise to less growth with a firmer texture.

LETTUCE DROP.

This constitutes the most destructive disease of lettuce, and is characterized by the plants wilting and dropping into an insignificant mass. This troublesome disease is caused by a sporeless soil fungus, which attacks the stem of the plant, and the only

eight inch in diameter. It does not cause excessive damage to cucumbers, as a rule, and the fungus can be entirely eliminated by sterilizing the soil.

Wild Animals in Winter.

The month has come when those of earth's creatures which know not the use of fire must make their preparations for winter if they would survive its hardships. They are confronted with problems which, if they are not already solved, must be attended to at once. In most cases their problems are those of food and shelter, sometimes one, sometimes both. Of course, the question of protection also comes up, and although this is always before them in some cases at least, it requires a special answer in winter. For this reason the fur of the Canadian hare, the ermine and some other mammals, and the plumage of the white-tailed ptarmigan, change from the brown color of summer to pure white, making them practically invisible in the snow.

Then in order that they may travel more easily over snow-covered ground, the feet of many animals are subject to peculiar modulation at this season.

As we all know, horny fringes grow upon the toes of grouse, the hoofs of certain deer become broader, and the feet of rabbits become wide, hairy pads. But these latter advantages, derived from change of color or growth peculiar to the season, are attained without any effort on the part of the creatures themselves. In order to obtain food and shelter for the winter, however, some animals are obliged to make active preparation.

Perhaps the best-known example of such preparation is that of the beavers, which first make a pond by damming a stream with trees, brush, stones and mud, and then, in the pond thus made erect staunch huts whose roofs are well above the water, and whose doorways are well below it. Here they spend the winter, swimming out under the ice in search of aquatic roots, or the bark of trees and bushes growing near the water, or, when other food fails them, eating the bark of saplings carried to the bottom of the pond and stored away near their huts in the autumn. Unfortunately, few of us ever get a chance to see either of these animals or their works, for not only have the beavers been almost exterminated, but those which still survive often spend their winters in holes in the banks of streams, afraid to make a dam or rear a hut that will be the signal for a massacre.

We can, however, get some idea of the beaver's natural preparation for winter by watching the muskrat which has some what similar habits. The muskrat makes no dam, but chooses for the site of his winter home a pond already in existence. Here he builds a hut or lodge on the same general plan as the beaver's, but much smaller. The material used in its construction is usually that which is easiest to obtain—sticks, leaves, moss, grass and the stems of bulrushes, being among the materials I have seen used by this animal. As far as I know, muskrats lay up no food for the winter, but depend entirely upon what they can pick up from day to day. Like the beavers, they are partial to the roots of aquatic plants, and fragments of these are often seen beneath the ice, where they have floated from the spot where some rat has been at work. Muskrats also go out into the fields through holes in the ice to eat any winter apples they may find under the trees, or to glean corn or other grain which may have been left by the farmers. They occupy their well-built houses chiefly in the daytime.

It would probably be difficult to mention a more provident animal than the common chipmunk, which for months now has been carrying into his long, winding, underground tunnel a store of nuts, grains and seeds of different kinds, which would probably last him for two winters if there should be a famine next year.

The red and the gray squirrels, too, have been busy collecting nuts for several weeks past, and many are the piles of shellbacks and butternuts hidden away in hollow trees, old woodchuck burrows, and underprostrate logs in the woods. But these creatures are not nearly so dependent on their winter stores as the chipmunk is, for red and gray squirrels are abroad more or less all winter, while the little huckeeb stick to their den from fall until spring.

The flying squirrels, too, sleep away the winter, but their slumber is less sound than that of the woodchuck. They do not wake up to eat, so far as I know, but if, on a warm day in winter, one taps gently on the hollow tree where they have their nest, they will come out in one, two, three order, and sail away through the woods.—Ernest Harold Baynes, in N. Y. Evening Post.

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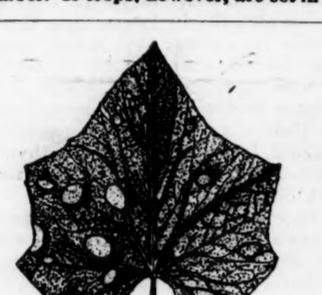
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LETTUCE PLANT AFFECTED WITH DROP.

This mildew can be readily distinguished by the typical yellowish, angular spots on the leaves. It is likely to occur on green house crops from August to November or December. If crops, however, are set in the



CUCUMBER DOWNTY MILDEW, Showing the characteristic angular spots.

house as late as October, they are apt to remain free from mildew during the rest of the year. Keeping the moisture down in the house, together with ventilation and light, is the best prevention of mildew.

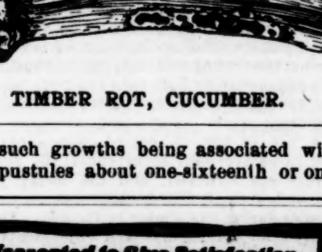
We have kept this mildew entirely in check on more than one occasion by simply keeping the moisture down in the house and supplying the plants with sufficient light and air.

Mildew infection comes largely during the summer, one of the best ways to obviate it is to not set the plants until about October. The mildew can also be prevented by spraying with bordeaux, as has been shown by experiments. In short, this is the only remedy that can be applied to outdoor crops of cucumbers.

TIMBER ROT.

Timber rot is caused by the same fungus that produces lettuce drop. On the cucumber it causes canker-like growths on the

stem, such growths being associated with black pustules about one-sixteenth or one-



TIMBER ROT, CUCUMBER.

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The flying squirrels, too, sleep away the winter, but their slumber is less sound than that of the woodchuck. They do not wake up to eat, so far as I know, but if, on a warm day in winter, one taps gently on the hollow tree where they have their nest, they will come out in one, two, three order, and sail away through the woods.—Ernest Harold Baynes, in N. Y. Evening Post.

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